

MotionC60™

C/C++ programmable Motion Controller with Interpolation



MC60™

Features:

- 4.65 x 3.75", Power consumption: 200 mA at 12V
- Driven by TERN's AE, AE86, RE, i386E, or 586-Engine™
- C/C++ programmable with complete software tool support.
- 4 axis pulse generator with linear or circular interpolation
- Can drive stepping motors, or pulse-train input servo-motors
- Protected high-voltage inputs, solenoid drivers, TTL I/Os
- 4 protected input switches for each axis: origin, plus limit, negative limit, and stop
- 4 high-speed counters and 5 comparators for each axis
- Linear and S-curve acceleration or deceleration modes.
- Quadrature Encoder or counter inputs for mechanical position
- Pulse and Direction outputs for each axis.
- Programmable pulse rate from 0.1 to 6.5M pulse per second
- 28-bits(+/- 134 Million) in-position control range
- 16-bit high speed host interface and interrupt support.
- Manual Pulser Input, Soft Limit, Backlash Correction.
- Various Operation Modes and Origin Return Sequences.
- Vibration Suppression, Simultaneous Start and Stop.

BACKGROUND

The MC60™ is a low-cost, high-performance, standalone, C/C++ programmable industrial controller for 4-axis stepping motor or pulse-train input servo motor control. It includes a high speed pulse generator chip (PCL6045A, Nippon Pulse Motor), a host parallel 16-bit bus interface, and many protected I/Os.

FEATURES

This controller is designed for motion-control applications that require interpolation. This allows the target to move along user-designated curves, or follow angular lines. Example applications

include: X-Y table, machine tools, robotics, auto welding machine, laser marking...

The PCL6045A chip supports linear interpolation among two to four axes, or circular interpolation between any two desired axes. During interpolation, the chip generates pulses constantly to the main axis and generates pulses intermittently to the slave axis. The accuracy of the position to the designated straight line for the linear interpolation or to the designated circle arc is +/- 0.5 LSB through the whole interpolation range. Many practical feature and functions are available to make the final motion precise and smooth. These functions include Manual Pulser Input, Soft Limit, Backlash Correction, Various Operation Modes Various Origin Return Sequences, Vibration Suppression, Idle pulse output, Out-of-Step Detection, Simultaneous Start and Simultaneous Stop.

ENGINE CONTROLLER

The MC60™ is driven by a host TERN Engine controller that has complete C/C++ program software tool support. It provides a standalone, ready to run, high performance motion control system with build-in sophisticated field proven control firmware and hardware. User only needs to define parameters for various control mode, velocity, acceleration rate and target position by sending simple commands from the host Engine via high-speed 16-bit data-bus. The PCL6045A chip will calculate velocity, position and stabilizes the motor, while the host Engine interfacing with external PC, monitoring I/Os, computing or pre-loading a new set of parameters into pre-registers.

User can easily develop application C/C++ program on a PC, download, and debug via serial link. The host writes pre-defined motion commands to the PCL6045A chip, and the chip can interrupt the host at any time.

The MC60™ provides protected inputs for home switches, limit switches, and stop switches. Solenoid drivers on-board are capable of sinking up to 350 mA at 50 V. Two RS-232 and one RS-485 driver can be installed. The host Engine processor interface to the PCL6045A chip via 16-bit parallel-word high-speed data-bus.

As position feedback, incremental quadrature encoders or counters are supported for each axis.

The MC60™ outputs pulses and direction signals to drive stepping motors, or or pulse-train input servo-motors.

Ordering Information

MC60 \$499/\$399/\$299/\$199 Qty 1/100/500/1K

Includes 4-axis control PCL6045A chip, solenoid drivers, protected switch inputs, 2 RS-232. Engine controller is NOT included.



1724 Picasso Ave., Ste. A, Davis, CA 95616, USA

Tel: 530-758-0180

Fax: 530-758-0181

sales@tern.com

http://www.tern.com